

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Original) An optical labeling molecule comprising:
 - (a) at least one zwitterionic dye moiety;
 - (b) a titrable group moiety; and
 - (c) a functional linker moiety.
2. (Original) The labeling molecule of Claim 1 further comprising a cleavable moiety.
3. (Original) The labeling molecule of Claim 1 or 2 further comprising a second label.
4. (Original) The labeling molecule of Claim 3, wherein the second label is a light stable isotope label.
5. (Original) The labeling molecule of Claim 3, wherein the second label is a heavy stable isotope label.
6. (Original) The labeling molecule of Claim 1, wherein charges on the zwitterionic dye moiety are stable between pH 3-12.
7. (Original) The labeling molecule of Claim 1, wherein the linker is an amine-reactive linker.
8. (Original) The labeling molecule of Claim 1, wherein the linker is a thiol-reactive linker.

9. (Original) The labeling molecule of Claim 1, wherein the linker is selected from the group consisting of amino group reactive imidoesters, N-hydroxysuccinimidyl esters or sulphydryl-reactive maleimides or iodoacetamides.

10. (Currently amended) The labeling molecule of Claim 1, wherein the zwitterionic dye moiety comprises a BODIPY dye with at least one additional zwitterionic component.

11. (Original) The labeling molecule of Claim 1, wherein the labeling molecule has the general structure:



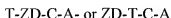
wherein ZD is the zwitterionic dye moiety, T is the titratable moiety, and A is linker moiety.

12. (Original) The labeling molecule of Claim 1, wherein the labeling molecule has the general structure:



wherein ZD is the zwitterionic dye moiety, T is the titratable moiety, and A is linker moiety.

13. (Original) The labeling molecule of Claim 2, wherein the labeling molecule has the general structure:



wherein ZD is the zwitterionic dye moiety, T is the titratable moiety, C is the cleavable moiety, and A is linker moiety.

14. (Original) The labeling molecule of Claim 3, wherein the labeling molecule has the general structure:

T-ZD-C-I-A-

wherein ZD is the zwitterionic dye moiety, T is the titratable moiety, C is the cleavable moiety, I is the stable isotope moiety and A is linker moiety.

15. (Original) The labeling molecule of Claim 3, wherein the labeling molecule has the general structure:

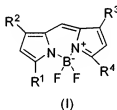
ZD-T-C-I-A-

wherein ZD is the zwitterionic dye moiety, T is the titratable moiety, C is the cleavable moiety, I is the stable isotope moiety and A is linker moiety.

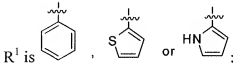
16. (Original) A target protein labeled with the labeling molecule of Claim 1, wherein the linker is covalently attached to the target protein.

17-27. (Canceled)

28. (New) The optical labeling molecule of Claim 1 having structural formula (I):

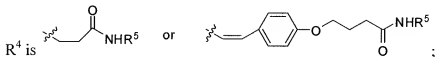


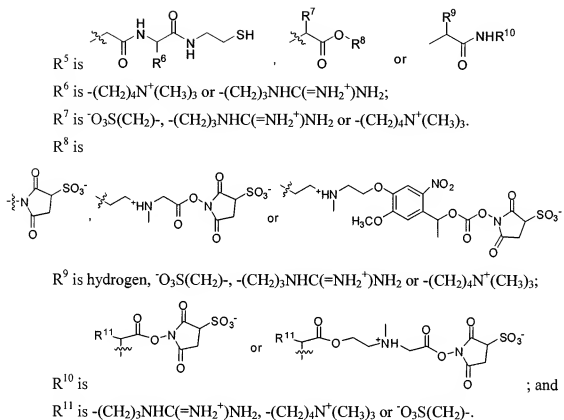
wherein:



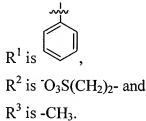
R^2 is $^-O_3S(CH_2)_2-$ or $-(CH_3)_3N^+(CH_2)_3$;

R^3 is $-CH_3$ or $-O_3S(CH_2)_2-$;

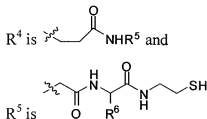




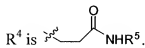
29. (New) The optical labeling molecule of Claim 28, wherein



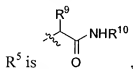
30. (New) The optical labeling molecule of Claim 29, wherein



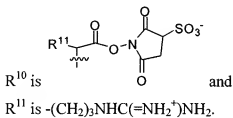
31. (New) The optical labeling molecule of Claim 29, wherein



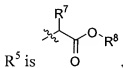
32. (New) The optical labeling molecule of Claim 31, wherein



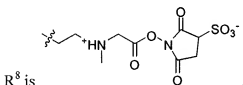
R^9 is hydrogen,



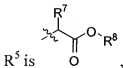
33. (New) The optical labeling molecule of Claim 31, wherein



R^7 is $\text{---} (\text{CH}_2)_3 \text{NHC}(=\text{NH}_2^+) \text{NH}_2$ and



34. (New) The optical labeling molecule of Claim 31, wherein



CN(C)CCOC1=CC(=C(C=C1)C(=O)OC2C(=O)N(C2)S(=O)(=O)C)C(=O)OC3C(=O)N(C3)S(=O)(=O)C \mathbb{R}^8 is

- $$\begin{array}{c} \text{R}^7 \\ | \\ \text{---} \text{C} \text{---} \text{O} \text{---} \text{R}^8 \\ || \\ \text{O} \end{array}$$

 \mathbb{R}^5 is[O-]S(=O)(=O)C1CC(=O)N(C1)C(=O)O \mathbb{R}^8 is

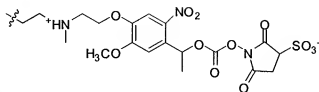
- $$\begin{array}{c} \text{R}^7 \\ | \\ \text{---} \text{C} \text{---} \text{C}(=\text{O}) \text{O} \text{---} \text{R}^8 \\ | \\ \text{O} \end{array}$$

 \mathbb{R}^5 is*CC[N+](C)(C)CC(=O)ON1C(=O)CC(S(=O)(=O)O)C1=O R^8 is

- $$\begin{array}{c} \text{R}^7 \\ | \\ \text{---} \text{C} \text{---} \text{C}(=\text{O}) \text{O} \text{---} \text{R}^8 \\ | \\ \text{---} \end{array}$$

 \mathbb{R}^5 is

R^7 is $-(CH_2)_4N^+(CH_3)_3$ and



R^8 is

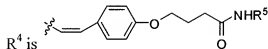
38. (New) The optical labeling molecule of Claim 28, wherein



R^1 is

R^2 is $^-\text{O}_3\text{S}(\text{CH}_2)_2-$,

R^3 is $-\text{CH}_3$ and



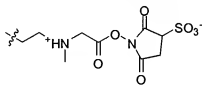
R^4 is

39. (New) The optical labeling molecule of Claim 38, wherein



R^5 is

R^7 is $-(CH_2)_3\text{NHC}(=\text{NH}_2^+)\text{NH}_2$ and



R^8 is

40. (New) The optical labeling molecule of Claim 38, wherein



R^5 is

R^7 is $-(CH_2)_3\text{NHC}(=\text{NH}_2^+)\text{NH}_2$ and



- R^5 is
- $$\begin{array}{c} R^7 \\ | \\ \text{---} \text{C} \text{---} \text{C}(=\text{O}) \text{---} \text{O} \text{---} R^8 \\ | \\ \text{O} \end{array}$$

 \mathbb{R}^5 is[O-]S(=O)(=O)C1CC(=O)N(C1)C2=CC=CC=C2 \mathbb{R}^8 is

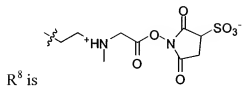
- R^5 is
- $$\begin{array}{c} R^7 \\ | \\ \text{---} \text{C} \text{---} \text{C}(=\text{O}) \text{---} \text{O} \text{---} R^8 \\ | \\ \text{O} \end{array}$$

 \mathbb{R}^5 is[O-]S(=O)(=O)C1CC(=O)N(C1)C2=CC=CC=C2 \mathbb{R}^8 is

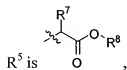
- R^5 is
- $$\begin{array}{c} R^7 \\ | \\ \text{---} \text{C} \text{---} \text{C}(=\text{O}) \text{---} \text{O} \text{---} R^8 \\ | \\ \text{O} \end{array}$$

 \mathbb{R}^5 is

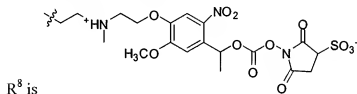
R^7 is $-(CH_2)_4N^+(CH_3)_3$ and



44. (New) The optical labeling molecule of Claim 38, wherein



R^7 is $-(CH_2)_4N^+(CH_3)_3$ and

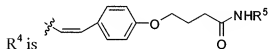


45. (New) The optical labeling molecule of Claim 28, wherein

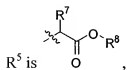


R^2 is $^-\text{O}_3\text{S}(\text{CH}_2)_2-$,

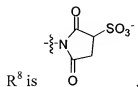
R^3 is $-\text{CH}_3$ and



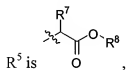
46. (New) The optical labeling molecule of Claim 45, wherein



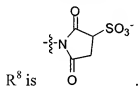
R^7 is $-(CH_2)_4N^+(CH_3)_3$ and



47. (New) The optical labeling molecule of Claim 45, wherein



R^7 is $-(CH_2)_3NHC(=NH_2^+)NH_2$ and



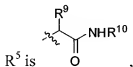
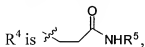
48. (New) The optical labeling molecule of Claim 28, wherein



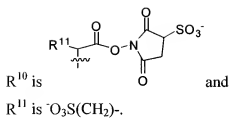
R^2 is $-(CH_3)_3N^+(CH_2)_3-$ and

R^3 is $-CH_3$.

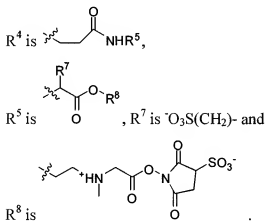
49. (New) The optical labeling molecule of Claim 48, wherein



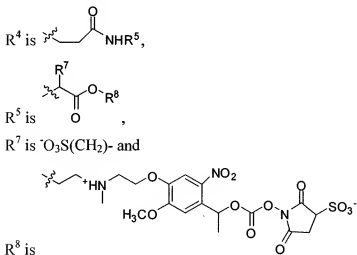
R^9 is hydrogen,



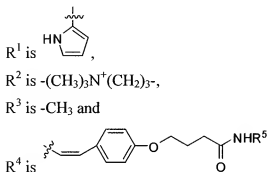
50. (New) The optical labeling molecule of Claim 48, wherein



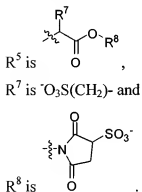
51. (New) The optical labeling molecule of Claim 48, wherein



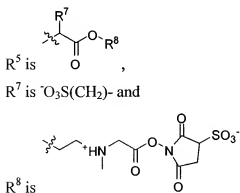
52. (New) The optical labeling molecule of Claim 28, wherein




53. (New) The optical labeling molecule of Claim 52, wherein





54. (New) The optical labeling molecule of Claim 52, wherein



- R^5 is 

CN(C)CCOC1=CC(=C(C=C1)OC)C(C)=C(C1C(=O)N(C1=O)C(=O)OS(=O)(=O)C)C(=O)OC2=CC=CC=C2



R^1 is  or .

R³ is ⁻O₃S(CH₂)₂-,

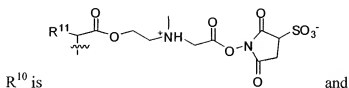
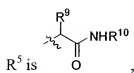
R^5 is

$$\begin{array}{c} R^9 \\ | \\ \text{---} \text{C} \text{---} \text{C}(=\text{O})\text{NHR}^{10} \\ | \\ \text{---} \end{array}$$
R11-C(=O)OCC[NH+]([CH3])CC(=O)ON1C(=O)CC(S(=O)(=O)[O-])C1=O

and

wherein R¹ is  or 

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R^9 and R^{11} are $-(CH_2)_3NHC(=NH_2^+)NH_2$.